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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,297	10/31/2003	T. William Hutchens	016866-001514	2693

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EXAMINER

ALEXANDER, LYLE

ART UNIT PAPER NUMBER

1743

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/700,297	HUTCHENS ET AL.	
	Examiner	Art Unit	
	Lyle A Alexander	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-73 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/20/04</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-21 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 fails to fulfill the preamble "an apparatus for facilitating desorption and ionization..." because no means to facilitate the desorption and ionization are claimed.

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 13, 37, 39, 56-62 are 66-73 are rejected under 35 U.S.C. § 102(a) as being clearly anticipated by Applicants' admitted prior art(see pages 1-5 of the specification).

On pages 1-2 under section 2, "Description of the Prior Art", Applicants state "Generally, analysis by mass spectrometry involves the vaporization and ionization of a small sample of mater, using a high energy source, such as a laser... The material is vaporized from the surface of a probe tip by the laser beam ... The positively charged ionized molecules are then accelerated through a short high voltage field and let fly into a high vacuum chamber, at the far end of which strike a sensitive detector surface... which in turn, can be used to identify ... known molecules ... All prior art procedure which present proteins or other large biomolecules on a probe tip ... The laser beam strikes the mixture on the probe tip and its energy is used to vaporize a small portion of the matrix material along with some of

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the embedded analyte molecules...".

Within this citation from the specification a method/apparatus is defined having a spectrometer tube, vacuum means, electrical potential means for accelerating a portion of the desorbed sample, a probe for presenting the sample where a portion (not all) of the sample is used, a laser and detector. Clearly the matrix in which the sample associated is an energy absorbing means since a portion of the matrix is vaporized (i.e. the matrix has absorbed energy to change its physical state).

Claims 1-73 are rejected under 35 U.S.C. § 102(e) as being clearly anticipated by Humpel et al. or Benninghoven et al.

The art teaches a method an apparatus indistinguishable from the instant claims where an analyte is immobilized and subjected to spectroscopic an analysis. It is inherent that not all of the sample would be consumed, since no process is 100% complete, and further analysis on the remaining sample could take place. In the absence of Applicant better defining what portion of the sample is retained, this limitation does not define over the art.

Claims 1-2,13, 37,39, 56-62 are 66-73 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Stuke, Beavis et al. or Zane et al.

These references teach a time of flight mass spectrometer for the analysis of biological samples that are bound to a sample probe when inserted into the mass spectrometer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-73 are rejected under 35 U.S.C. § 103 as being unpatentable over Turteltaub et al. in view of Stuke.

Turteltaub et al. teach teaches a method/apparatus time of flight mass spectrometer for the analysis of biological samples that are bound to a sample probe when inserted into the mass spectrometer similar to that presently claimed. Turteltaub et al. teaches the biological samples an ion source rather than the claimed laser excites being.

Stuke teaches a similar apparatus that employs a laser to excite the samples prior to mass spectrometry time of flight (MSTOF) analysis. Stuke teaches the laser has the advantage of being controllable to picosecond bursts which give greater control on the sample excitement and minimized the fragmentation of the sample. It would have been within the skill of the art to modify the method/apparatus taught by Turteltaub et al. in view of Stuke to use

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a laser to excite the sample prior to MSTOF analysis to gain the advantages taught above.

Claims 3-12, 14-36, 38, 40-55 and 63-65 are rejected under 35 U.S.C. § 103 as being unpatentable over

Applicants' disclosure (see pages 1-5) or Stuke further in view of Turteltaub et al.

See Applicants' disclosure (see pages 1-5) and Stuke supra.

The cited prior art fails to teach the claimed affinity binding of the sample to the probe substrate as presently claimed.

Turteltaub et al. teaches a MSTOF analysis method and apparatus similar to that presently claimed here.

Turteltaub et al. teaches that an affinity type of reaction can obtain small amounts of specific biological samples. This type of sample acquisition is advantageous because very specific substance for analysis can be obtained through this affinity binding collection techniques.

It would have been within the skill of the art to modify the method/apparatus taught by Applicants' disclosure (see pages 1-5) or Stuke in view of Turteltaub et al. and use affinity binding techniques to collect the samples to gain the advantages taught above.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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Claims 1-73 are provisionally rejected under the judicially created doctrine of double patenting over claims 74-125; 74-131; 1-53; 1-30; 1-31; 1-31 of copending Application No. 10/882,608; 10/887,107; 10/626,493; 10/150,472; 09/123,253 ; 10/728,442. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: because all are directed to a method and apparatus for the laser desorption of an analyte from a probe.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claims 2-13,25-36,57-66 and 72-73 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-31 and 1-50 of copending Application No. 10/626,303 and 10/124,626. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant

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application are claiming common subject matter, as follows: methods of desorbing a sample from a probe.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claims 1-73 are rejected under the judicially created doctrine of double patenting over claims 1-47; 1-20; 1-54; 1-61; 1-45; 1-20 of U. S. Patent No. 5,894,063; 5,719,060; 6,027,942; 6,124,137; 6,528,320; 6,734,022 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: all are directed to a method and apparatus for the desorption of a biological sample from a probe for subsequent analysis.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claims 2-13,25-36,57-66 and 72-73 are rejected under the judicially created doctrine of double patenting over claims 1-13; 1-34; 1-27; 1-22 of U. S. Patent No.

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6,818,411; 6,811,969; 6,579,719; 6,225,047 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: all are directed to methods for desorption of a sample from a probe.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lyle A Alexander whose telephone number is 571-272-1254. The examiner can normally be reached on Monday, Wednesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lyle A Alexander
Primary Examiner
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A handwritten signature in black ink, appearing to be 'Lyle A. Alexander', written in a cursive style.